

ORIGINAL UNITED STATES PATENT APPLICATION

REFERENCES CITED

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U. S. Patents:

6,325,025	Perrone	Soot-blowing optimization system
6,278,051	Peabody	Differential thermopile heat flux transducer
5,990,412	Terrell	Differential thermopile heat flux transducer formed by depositing metals and non-metals from liquids onto a substrate
5,360,051	Takahashi et al	Continuous casting method and apparatus for implementing same method
5,314,247	Liebert et al	Dual active surface, miniature, plug-type heat flux gauge
5,086,204	Liebert et al	Method of producing a plug-type heat flux gauge
5,048,973	Liebert et al	Plug-type heat flux gauge
4,779,994	Diller et al	Heat flux gage
4,567,365	Degenne	Sensor of energy flux, in particular heat flux and visible and infrared radiation

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ABSTRACT

A sensor designed for measurement of conducted heat flux passing through a solid object consists of a thin film thermopile deposited on a planar substrate whose thermal properties match those of the solid object. The thermopile is protected by a thin rectangular plate made of the same material as the substrate. The sensor is imbedded in the solid object and measures the vector of heat flux along the thermopile axis with minimal distortion of the heat flow pattern. Applications include measurement of heat flux in casting molds, boiler tubes, well surveying instruments and laser weapons testing.